ABSTRACT OF THE DISCLOSURE

A slurry for copper polishing has a pH between 7.5 and 12. In a particular embodiment of the present invention, a slurry for polishing copper has a pH between 8 and 11.5, and includes a SiO_2 abrasive, a $(NH_4)_2S_2O_8$ oxidizer, a benzotriazole corrosion inhibitor, and a K_3PO_4/K_2HPO_4 buffer. A copper polish slurry, in accordance with the present invention, operates with a high pH of greater than approximately 7.5. In this range the slurry has a low static etch due to formation of a robust, protective layer. This slurry may additionally have $S_2O_8^{-2}$ or $Fe(CN)_6^{-3}$ as an oxidizer and can thus offer a high polish rate on the order of 7,000 to 10,000 angstroms per minute which does not decrease significantly during polishing. Such an inventive slurry offers a wide CMP process window such that the slurry and process parameters can be optimized to yield low recess, erosion, and dishing on patterned wafers.